

US009636817B2

(12) United States Patent McLain

(10) Patent No.: US 9,636,817 B2

(45) **Date of Patent:**

May 2, 2017

(54) OUTDOOR MULTI-USE HAND TOOL

(71) Applicant: DJS Enterprises, Hartland, WI (US)

(72) Inventor: Scott S. McLain, Mukwonago, WI

(US)

(73) Assignee: D.J.S. Enterprises, Inc., Oconomowoc,

WI (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 68 days.

(21) Appl. No.: 14/449,539

(22) Filed: Aug. 1, 2014

(65) Prior Publication Data

US 2015/0034391 A1 Feb. 5, 2015

Related U.S. Application Data

- (60) Provisional application No. 61/861,741, filed on Aug. 2, 2013, provisional application No. 61/915,201, filed on Dec. 12, 2013.
- (51) **Int. Cl.**A01B 33/02 (2006.01)

 B25F 5/00 (2006.01)

 A46B 13/02 (2006.01)

1/06–1/065; A01B 15/16; A01B 9/00–9/006; A01B 1/00–1/246; A01B 23/06; A01B 35/28; A01B 37/00 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

| DE10 242 E | * | 7/1024 | Miller A01B 33/10 |
|---------------|-----|----------|-------------------------|
| KE19,242 E | | 7/1934 | |
| | | | 172/549 |
| 2,366,626 A | * | 1/1945 | Cadwallader A01B 33/082 |
| | | | 172/51 |
| 2.749.563 A | * | 6/1956 | Resser, Sr A46B 13/00 |
| 2,7 13,503 11 | | 0, 1550 | 15/102 |
| | | | 10,102 |
| 2,823,597 A | . ж | 2/1958 | Cadwallader A01B 33/027 |
| | | | 172/103 |
| 2.847.924 A | * | 8/1958 | Quick A01B 33/12 |
| _, , | | | 172/123 |
| | ٠. | 40(40.50 | 1.2.120 |
| 2,907,395 A | | 10/1959 | Moe A01B 1/065 |
| | | | 172/125 |
| 3.031.018 A | * | 4/1962 | Smithers A01B 33/027 |
| 5,051,010 11 | | . 1502 | |
| | | | 172/122 |

(Continued)

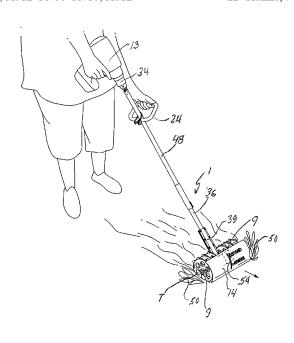
Primary Examiner — Robert Pezzuto Assistant Examiner — Adam Behrens

(74) Attorney, Agent, or Firm — Boyle Fredrickson, S.C.

(57) ABSTRACT

A powered hand tool is adapted to use a variety of interchangeable rotary tools to assist in outdoor activities. Either of two basic tool designs can be utilized for activities including garden tilling, brushing and cleaning, auguring or post hole digging, and auto finishing and polishing. In one embodiment, an adjustable shroud is utilized along with a tiller construction to change the viewing angle of the working tiller tines to facilitate use by operators of different heights, including a kneeling position. The ability to utilize tow torque and low speed assists in avoiding accidental damage to underground wires and, if encountered, the reversibility of the drive assists in untangling the wires.

12 Claims, 9 Drawing Sheets



13/02 (2013.01)